Zane Ma

Assistant Professor
Oregon State University
Computer Science
Last updated: 2025/05/06

2019 Kelly Engineering Center
Corvallis, OR 97331
zane.ma@oregonstate.edu
zanema.com

POSITIONS

2023–PRESENT	**Assistant Professor** at *Oregon State University*
	- Lead the Applied Security and Trust Research @ OSU (ASTRO) Lab.
	- Lead multi-institution research team for DARPA project on 5G defensive cyber operations.
2023–PRESENT	**Research Affiliate** at *Georgia Institute of Technology*
2021–2023	**Research Scientist II** at *Georgia Institute of Technology*
	Advisor: Manos Antonakakis
	- Co-advised several Ph.D. students on DNS, malware, IoT, and PKI research projects.

EDUCATION

2015 – 2021	**Doctor of Philosophy** in Computer Science, *University of Illinois at Urbana-Champaign*
	Advisor: Michael D. Bailey
	Committee: Adam Bates Yuile, Gang Wang, Nikita Borisov, Zakir Durumeric
2008 – 2012	**Bachelor of Arts** with Honors in Chemistry, *Princeton University*
	Advisor: Erik J. Sorensen

AWARDS AND FELLOWSHIPS

2021	Illinois CS Graduate Student Outstanding Service Award
2020	Mavis Future Faculty Fellowship
2020	Yunni & Maxine Pao Memorial Fellowship
2019	Best Paper Award, The Web Conference (WWW)

RESEARCH PUBLICATIONS

15. **[TMA '25]** Kevin Sam Tharayil, Athanasios Avgetidis, <u>Zane Ma</u>, Manos Antonakakis, Angelos Keromytis "**Understanding Orphan Flows**." *Network Traffic Measurement and Analysis Conference (TMA)*. June 2025. (Acceptance rate: 36.5% = 19 / 52 submissions)

14. **[S&P '24]** Tillson Galloway, Kleanthis Karakolios, <u>Zane Ma</u>, Roberto Perdisci, Manos Antonakakis, Angelos Keromytis "**Practical Attacks against DNS Reputation Systems**." *IEEE Symposium on Security and Privacy (S&P)*. May 2024. (Acceptance rate: 14.4% = 170 of 1183 submissions)

13. **[IMC '23]** <u>Zane Ma</u>, Aaron Faulkenberry, Thomas Papastergiou, Zakir Durumeric, Michael Bailey, Angelos Keromytis, Fabian Monrose, and Manos Antonakakis. "**Stale TLS Certificates: Investigating Precarious Third-Party Access to Valid TLS Keys**." *ACM Internet Measurement Conference (IMC)*. October 2023. (Acceptance rate: 25.9% = 52 of 201 submissions)

12. **[ACSAC '22]** Aaron Faulkenberry, Athanasios Avgetidis, <u>Zane Ma</u>, Omar Alrawi, Charles Lever, Panagiotis Kintis, Fabian Monrose, Angelos Keromytis, Manos Antonakakis. "**View from Above: Exploring the Malware Ecosystem from the Upper DNS Hierarchy**." *Annual Computer Security Applications Conference (ACSAC)*. December 2022. (Acceptance rate: 24.1% = 73 of 303 submissions)

11. **[IMC '21]** <u>Zane Ma</u>, James Austgen, Joshua Mason, Zakir Durumeric, Michael Bailey. "**Tracing Your Roots: Exploring the TLS Trust Anchor Ecosystem**." *ACM Internet Measurement Conference (IMC)*. November 2021. (Acceptance rate: 28.1% = 55 / 196 submissions)

10. **[USENIX '21]** <u>Zane Ma</u>, Joshua Mason, Manos Antonakakis, Zakir Durumeric, Michael Bailey. "**What's in a Name? Exploring CA Certificate Control**." *USENIX Security Symposium (Sec)*. August 2021. (Acceptance rate: 18.8% = 248 / 1319 submissions)

9. **[WWW '21]** Paul Murley, <u>Zane Ma</u>, Joshua Mason, Michael Bailey, Amin Kharraz. "**WebSocket Adoption and the Landscape of the Real-Time Web**." *The Web Conference (WWW)*. April 2021. (Acceptance rate: 20.6% = 357 / 1736 submissions)

8. **[CHI '20]** Joshua Reynolds, Deepak Kumar, <u>Zane Ma</u>, Rohan Subramanian, Meishan Wu, Martin Shelton, Joshua Mason, Emily Stark, Michael Bailey. "**Measuring Identity Confusion with Uniform Resource Locators**." *ACM Conference on Human Factors in Computing Systems (CHI)*. April 2020. (Acceptance rate: 24.3% = 760 / 3126 submissions)

7. **[CSET '19]** <u>Zane Ma</u>, Joshua Reynolds, Joseph Dickinson, Kaishen Wang, Taylor Judd, Joseph D. Barnes, Joshua Mason, Michael Bailey. "**The Impact of Secure Transport Protocols on Phishing Efficacy**." *Workshop on Cyber Security Experimentation and Test (CSET)*. August 2019. (Acceptance rate: 31.1% = 19 / 61 submissions)

6. **[WWW '19]** Amin Kharraz, <u>Zane Ma</u>, Paul Murley, Charles Lever, Joshua Mason, Andrew Miller, Nikita Borisov, Manos Antonakakis, Michael Bailey. "**OUTGUARD: Detecting In-Browser Covert Cryptocurrency Mining in the Wild**." *The Web Conference (WWW)*. May 2019. (Acceptance rate: 18.0% = 225 / 1247 submissions)
   Best Paper Award

5. **[IMC '18]** Seoung Kim, <u>Zane Ma</u>, Siddarth Murali, Josh Mason, Andrew Miller, Michael Bailey. "**Measuring Ethereum's Peer-to-Peer Network**." *ACM Internet Measurement Conference (IMC)*. November 2018. (Acceptance rate: 24.7% = 43 / 174 submissions)

4. **[USENIX '17]** <u>Zane Ma</u>, Manos Antonakakis, Tim April, Michael Bailey, Matt Bernhard, Elie Bursztein, Jaime Cochran, Zakir Durumeric, J. Alex Halderman, Luca Invernizzi, Michalis Kallitsis, Deepak Kumar, Chaz Lever, Joshua Mason, Damian Menscher, Chad Seaman, Nick Sullivan, Kurt Thomas, Yi Zhou. "**Understanding the Mirai Botnet**." *USENIX Security Symposium (Sec)*. August 2017.

   (Acceptance rate: 16.3% = 85 / 522 submissions)

3. **[NDSS '17]** Zakir Durumeric, <u>Zane Ma</u>, Drew Springall, Richard Barnes, Nick Sullivan, Elie Bursztein, Michael Bailey, J. Alex Halderman, Vern Paxson. "**The Security Impact of HTTPS Interception**." *Network and Distributed Systems Symposium (NDSS)*. February 2017. (Acceptance rate: 16.1% = 68 / 423 submissions)

2. **[WWW '17]** Deepak Kumar, <u>Zane Ma</u>, Zakir Durumeric, Ariana Mirian, Joshua Mason, Michael Bailey, J. Alex Halderman. "**Security Challenges in an Increasingly Tangled Web**." *World Wide Web Conference (WWW)*. April 2017. (Acceptance rate: 17.0% = 164 / 966 submissions)

1. **[PST '16]** Ariana Mirian, <u>Zane Ma</u>, David Adrian, Matthew Tischer, Thasphon Chuenchujit, Tim Yardley, Robin Berthier, Josh Mason, Zakir Durumeric, J. Alex Halderman, Michael Bailey. "**An Internet-Wide View of ICS Devices**." *IEEE Conference on Privacy, Security, and Trust (PST)*. December 2016. (Accepted.)

FUNDING

2. CyberCorps Scholarship for Service: A Clinical Rotation Approach to Professional Cybersecurity Workforce Development
   - **My role: Co-PI**
   - Funding agency: NSF
   - Personal share: TBD
   - Total: $4,799,707.00
   - 1/1/2023 to 12/31/2027

1. PRogrammable INfrastructure for CounterIng Pugnacious Adversaries on a Large Scale (PRINCIPALS)
   - **My role: PI (Subcontract)**
   - Funding agency: DARPA
   - Personal share: $196,947 (100%)
   - Total: $196,947
   - 9/1/2023 to 9/30/2024

TALKS

Conferences & Forums

Oct. 2024	**Stale TLS Certificates: Investigating Precarious Third-Party Access to Valid TLS Keys**	
	CA/Browser Forum	
Oct. 2023	**Stale TLS Certificates: Investigating Precarious Third-Party Access to Valid TLS Keys**	
	ACM Internet Measurement Conference (IMC '23)	
Apr. 2022	**Tracing Your Roots: Exploring the TLS Trust Anchor Ecosystem**	
	Hot Topics in the Science of Security (HotSoS '22)	
Nov. 2021	**Tracing Your Roots: Exploring the TLS Trust Anchor Ecosystem**	
	ACM Internet Measurement Conference (IMC '21)	
Oct. 2021	**Exploring CA Certificate Control**	
	CA/Browser Forum	
Aug. 2021	**What's in a Name? Exploring CA Certificate Control**	
	USENIX Security Symposium (Sec '21)	
Aug. 2019	**The Impact of Secure Transport Protocols on Phishing Efficacy**	
	Workshop on Cyber Security Experimentation and Test (CSET '19)	
Feb. 2018	**Mirai and the Future of IoT botnets**	
	M3AAWG: 42nd General Meeting	
Aug. 2017	**Understanding the Mirai botnet**	
	USENIX Security Symposium (Sec '17)	

Seminars & Guest Lectures

May 2024	**Peeking into the WebPKI: Uncovering the Trust That Sustains Web Server Authentication**	
	NOISE Lab Seminar	
Jul. 2022	**Reflections on Trusting Identifiers: The Foundations of Social Engineering**	
	Stanford Security Seminar	
Nov. 2021	**WebPKI and Trust**	
	Stanford CS249i Guest Lecture	
Sept. 2021	**Understanding the Trust Relationships of the Web PKI**	
	Georgia Tech Cybersecurity Lecture Series	
Apr. 2020	**Fundamentals of Phishing: A Usability Perspective**	
	UC San Diego Security Seminar	
Nov. 2017	**Understanding the Mirai botnet**	
	University of Chicago Security Seminar	

TEACHING

Winter 2025	CS/ECE478: Network Security[†]	*Instructor*
Fall 2024	CS499/579: Empirical Computer Security	*Instructor*
Fall 2023	CS499/579: Empirical Computer Security[†]	*Instructor*
Spring 2021	CS 461: Intro to Comp. Security	*TA*
Fall 2020	CS 461: Intro to Comp. Security	*TA**
Spring 2020	CS 461: Intro to Comp. Security	*TA*
Fall 2019	CS 461: Intro to Comp. Security	*TA*
Spring 2019	CS 461: Intro to Comp. Security	*TA*
Spring 2018	CS 461: Intro to Comp. Security	*TA*
Fall 2015	CS 241: System Programming	*TA**

*Outstanding instructor rating (top 10%)
[†]Newly created or re-designed course

MENTORSHIP

Ph.D. students

2025 – PRES.	Predrag Despotovic

Masters students (* = Thesis)

2023 – PRES.	*Lucas Stephens	User authentication breaches.
2024 – PRES.	*Alexis Deviney	ENS name resolution and ownership.
2024 – PRES.	*Andrew Le	DNS semantic modeling.
2024 – PRES.	*Elliot Foley	Image provenance systems.
2025 – PRES.	*Derek Greene	WebPKI domain control validation.

Undergraduate (* = Honors College w/ Thesis)

2023 – PRES.	Abigail Whittle	
2024 – PRES.	*Ksenia Bannova	Comparison of Key Transparency Systems.
2025 – PRES.	Kevin Rossel	
2025 – PRES.	Jacob Porter	
2024 – 2025	*Derek Greene	Domain control validation attack surface.
2024 – 2024	Owen Debelak	
2023 – 2025	Jacquelyn Sansone	

Committees

2025	PhD	Akshith Gunasekaran
2025	MS	David Richardson
2025	MS	Naman Kumar
2024	MS (Project)	Juily Deshpande
2024	MS (Project)	Avani Sathe
2024	MS (Project)	Atharva Joshi

SERVICE

Professional

2025	ACM Internet Measurement Conference (IMC)	*Program Committee*
2025	USENIX Security Symposium (Sec)	*Program Committee*
2025	IEEE Symposium on Security and Privacy (S&P)	*Program Committee*
2024	ACM CoNEXT Workshop on Decentralization of the Internet (DIN)	*Program Committee*
2024	IEEE Symposium on Security and Privacy (S&P)	*Program Committee*
2023	Workshop on IoT Security and Cyber Threat Intelligence (IoT SCTI)	*Program Committee*
2023	Workshop on Cryptography Applied to Transparency Systems (CATS)	*Program Committee*
2023	NSF Secure and Trustworthy Computing (SaTC)	*Panel Reviewer*
2023	IEEE Symposium on Security and Privacy (S&P)	*Program Committee*
2022	ACM Conference on Computer and Communications Security (CCS)	*Program Committee*

Institutional

2024 – PRES.	OSU Information Security Advisory Committee	*Member*
2023 – PRES.	OSU EECS Graduate Admissions Committee	*Member*
2023 – PRES.	OSU Security Club	*Faculty Advisor*

REFERENCES

Michael Bailey
Professor and Founding Chair of School of Cybersecurity and Privacy (SCP)
Georgia Institute of Technology
mbailey@gatech.edu

Manos Antonakakis
Associate Professor and Dean's Professorship in Electrical and Computer Engineering

Georgia Institute of Technology
manos@gatech.edu

Zakir Durumeric
Assistant Professor of Computer Science
Stanford University
zakir@cs.stanford.edu

Angelos Keromytis
John H. Weitnauer Endowed Chair Professor of Electrical and Computer Engineering
Georgia Institute of Technology
angelos@gatech.edu

Fabian Monrose
Julian T. Hightower Chair Professor of Electrical and Computer Engineering
Georgia Institute of Technology
fabian@ece.gatech.edu